

REMARKS

Claims 1-20 are all the claims pending in the application. Claims 1-20 presently stand rejected.

Claim 17 is rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Applicant deletes the term “quality” from the claim, since it is not required to clearly state the invention. Thus, this rejection of claim 17 should be overcome.

Claims 1-6 are rejected under 35 U.S.C. § 102(e) as being anticipated by Neriishi (US 2002/0197568).

Claims 1, 3 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagasawa (US 2002/0127585) in view of Maul (5,955,377), Beattie (5,843,767) and newly cited Fernwood (4,493,815).

Analysis of the Prior Art Rejections

Claim 1 is the only claim in independent form; therefore, the following discussion is initially directed to this independent claim.

§ 102(e) Prior Art Rejection:

The Examiner maintains that Neriishi anticipates claim 1.

Even though the pore diameter range overlaps, Neriishi does not disclose this range with “sufficient specificity to constitute an anticipation”. See MPEP 2131.04(II). In other words, the pending claims are directed to a narrow range of 1-10 μm , whereas Neriishi is directed to a broad range of 0.1 – 50 μm , and Neriishi does not provide any specific examples falling within the claimed narrow range. As explained below, the claimed invention is based on expected results,

and thus, the claimed narrow range is not disclosed with “sufficient specificity” to constitute an anticipation of the claims. Moreover, these unexpected results render the claims unobvious.

Specifically, the present invention is intended to detect a small amount of labeled receptors or labeled ligands with a high S/N ratio by using a porous adsorptive material having a pore diameter within the range of 1 to 10 μm . Normally, when one tries to detect a small amount of labeled receptors or labeled ligands, the S/N ratio drops. In order to solve such a problem, the present invention specifies the pore diameter to be 1 to 10 μm . This numerical limitation on the pore diameter is technically important to achieve both the small amount detection and the improvement in the S/N ratio at the same time.

In the specification of the present application, Table 1 shows the S/N ratios of Examples 1-3 of the present invention and the S/N ratio of Comparative Example 1. The pore diameter of Comparative Example 1 is 0.45 μm , which is within the ranges taught in Neriishi (0.1 to 50 μm) and Beattie (2nm to 312 μm). As shown in Table 1, the S/N ratios in Examples 1-3 of the present invention are more than twice the S/N ratio of Comparative Example 1. Such unexpected advantages of the present invention are achieved due to the specific numerical limitations on the range of pore diameters (that is, the requirement of a narrower range), which are not taught in Neriishi.

The objective of Neriishi is to bind specific binding substances to a biochemical analysis unit at high density. Therefore, in Neriishi, the pore diameter should be as small as possible to achieve the objective. In fact, in the first embodiment of Neriishi, the small holes of the absorptive material *disappear* when the absorptive material is pressed onto the base plate 5 (see paragraphs [0102] and [0108]) to form the absorptive regions 4. Hence, in Neriishi, there is no

motivation to set the lower and upper limits of the specific narrow range of the pore diameter as required in the present invention. Further, when Neriishi refers to the lower limit of 0.1 μm , this value "0.1 μm " is set merely as the minimum pore diameter of the porous structure for forming a free space of 10 to 90%.

In view of the foregoing, claim 1 is not anticipated by Neriishi.

§ 103(a) Prior Art Rejection:

Turning to the obviousness rejection of claim 1, the Examiner relies on Beattie, which discloses pore diameters of 2nm to several micrometers. As with the anticipation rejection of claim 1, Beattie's disclosed range is so broad as to encompass a very large number of possible distinct compositions. Applicant rebuts this prima facie case of obviousness by showing the criticality of the claimed range as discussed above. This is evidenced by showing that the claimed range achieves unexpected results relative to the prior art range. See MPEP 2144.05(I) and (III). In other words, the claims are directed to a narrow range of 1-10 μm , whereas Beattie is directed to a broad range of 2 nm ~ 3 μm . As discussed above, unexpected results were achieved with the claimed narrow range, and thus, it would not have been obvious to reach the claimed narrow range based on the teachings Beattie.

The Examiner also relies on Fernwood for disclosing pore size. However, Fernwood is directed to the pore size of a membrane rather than a porous adsorptive material filling a hole.

Moreover, and more importantly, Fernwood specifically states:

"Neither the pore size of the membrane nor the membrane thickness are critical. Both can vary widely...In most applications, pores of diameter ranging from about 0.001 to about 1.0 micron, preferably from about 0.00 to about 0.5 micron in diameter...will provide the best results."

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Thus, Fernwood discloses that the pore size is not critical, and discloses a wide range, which is so broad that it encompasses a very large number of possible distinct compositions. Thus, as with the other references, it would not have been obvious to obtain the narrower claimed range of Applicant's invention.

In view of the foregoing, claim 1 is not rendered obvious by the combination of Nagasawa in view of Maul, Beattie and Fernwood.

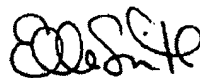
The remaining rejections are directed to the dependent claims. These claims are patentable for at least the same reasons as claim 1, by virtue of their dependency therefrom.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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